

Appl. No. 10/577,652
Amendment dated March 11, 2011
Reply to Office Action of January 12, 2011

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of claims:

1. **(Currently Amended)** Apparatus for delivering radiation to a target volume (46) beneath a skin surface, comprising:

a radiation source (16) for inputting a beam of said radiation having an input energy fluence; and

a beam conversion system (17) having:

a first radiation directing element (24) having a symmetry axis (27), comprising a rotator (21) having a rotation axis collinear with said symmetry axis for rotating said input ~~beam radiation~~ around said symmetry axis said first radiation directing element adapted to direct said ~~radiation beam~~ in a plurality of directions spaced around said symmetry axis and

a second radiation directing element (25) for redirecting said directed radiation ~~beam~~ through said surface radially inwards towards said symmetry axis onto said at least one target volume (46) disposed on said symmetry axis beneath said skin surface, such that said radiation is spread out in a rotational path on said surface, wherein

said second radiation directing element (25) has convergence ability in at most, one plane, and

~~any~~ none of said radiation impinging on said skin surface on said symmetry axis has a fluence which is less than the maximum fluence of said radiation on said skin surface, and said energy fluence of said radiation at said target volume is higher than said energy fluence of said radiation at said skin surface.

2. **(Cancelled)**

3. **(Currently Amended)** The apparatus according to claim 1 wherein said second radiation directing element further comprises ~~at least one~~ reflective element (25) for redirecting said directed radiation ~~beam~~ through said surface radially inwards towards said symmetry axis onto said at least one target volume

4. **(Currently Amended)** The apparatus according to claim 3 wherein said radiation has a spectral band between ~~300nm-801nm~~ and ~~4400nm-1900nm~~.

5. **(Previously Presented)** The apparatus according to claim 3, said apparatus being configured such that said energy fluence of said redirected radiation is less than or equal to said input energy fluence.

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6. (Currently Amended) The apparatus according to claim 1, said apparatus being configured such that the focal point of such beam is said radiation is essentially non-focused at located outside said target volume.

7. (Previously Presented) The apparatus according to claim 1 wherein said redirected radiation is in a collimated form.

8. (Cancelled)

9. (Currently Amended) Apparatus for delivering radiation to a target volume (49) beneath a skin surface, comprising:

a radiation source (16) for inputting a beam (86) of said radiation having an input energy fluence; and

a beam conversion system (17) having:

reflective beam divider (81) having a symmetry axis (82) for spreading said input radiation in said plurality of directions spaced around said symmetry axis, and a reflective beam collector (83) for redirecting said spread out radiation through said surface radially inwards towards said symmetry axis, onto said at least one target volume (49) disposed on said symmetry axis beneath said skin surface, wherein

said reflective beam collector (83) has convergence ability in at most, one plane, and said radiation has a spectral band between 801nm and 1900nm, and said energy fluence of said radiation at said target volume is higher than said energy fluence of said radiation at said skin surface.

10. (Currently Amended) The apparatus according to claim 9, said apparatus being configured such that said energy fluence of said redirected beam radiation is essentially non-focused at said target volume.

11-14. (Cancelled)

15. (Currently Amended) A method for delivering radiation beneath a skin surface, comprising the steps of:

providing a radiation source for inputting a beam of said radiation having an input energy fluence; and

providing a conversion system for converting said input beam into radiation directed in a plurality of directions spaced around a symmetry axis and inclined angularly to said symmetry axis, towards at least one target volume disposed on said symmetry axis beneath said skin surface, such that:

none of said radiation impinging on said surface on said symmetry axis has a fluence which is less than the maximum fluence of said radiation on said skin surface.

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said radiation has convergence controllable independently in the plane parallel to the surface and in the plane perpendicular to the surface.

said radiation has a spectral band between 801nm and 1900nm.

16. **(Currently Amended)** A method according to claim 15 and further comprising the step of providing a rotator for rotating said input radiation around said symmetry axis, such that said radiation is spread out in a rotational path on said surface.

17. **(Original)** A method according to claim 16 and also comprising the step of providing at least one reflective element for directing said radiation through said surface radially inwards towards said symmetry axis and said target volume.

18. **(Cancelled)**

19. **(Currently Amended)** A method according to claim 16 and further comprising the step of providing a radiation directing elements for converging said radiation onto said target volume without the use of elements having optical power.

20. **(Currently Amended)** A method according to claim 16 and wherein said radiation is ~~essentially~~ non-focused at said target volume.

21. **(Original)** A method according to claim 16 and wherein said rotated radiation is in a generally collimated form.

22. **(Cancelled)**

23. **(Original)** A method according to claims 15, and further comprising the step of providing a reflective beam divider for spreading said input radiation in said plurality of directions, and a reflective beam collector for redirecting said spread out radiation towards said target volume.

24. **(Previously Presented)** A method according to claim 23 and further comprising the step of converging said radiation onto said target volume without the use of elements having optical power.

25. **(Currently Amended)** A method according to claim 23 and wherein said radiation has a spectral band between ~~300nm~~ 801nm and ~~41000nm~~ 1900nm.

26. **(Previously Presented)** The apparatus according to claim 1 wherein said beam conversion system converges said radiation onto said target volume without the use of elements having optical power.

27. **(Previously Presented)** The apparatus according to claim 1 wherein said second radiation directing element converges said radiation onto said target volume without the use of elements having optical power.

28. **(Previously Presented)** The apparatus according to claim 9 wherein said beam conversion system converges said radiation onto said target volume without having optical power.